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10/605,744	10/23/2003	Gong-Sheng Lin	MTKP0086USA	2743

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NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION
P.O. BOX 506
MERRIFIELD, VA 22116

EXAMINER	
FINDLEY, CHRISTOPHER G	
ART UNIT	**PAPER NUMBER**
2621	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	02/27/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 02/27/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

winstonhsu@naipo.com

Office Action Summary	Application No.	Applicant(s)	
	10/605,744	LIN ET AL.	
	Examiner	Art Unit	
	Christopher Findley	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-20 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *See Continuation Sheet*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :10/23/2003, 10/30/2003, and 11/1/2006.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

2. Claim 5 recites the limitation " outputting the coded result" in lines 3 and 4 of claim 5. There is insufficient antecedent basis for this limitation in the claim.

For the purpose of prior art analysis, the phrase "outputting the coded result" will be interpreted as meaning "outputting the decoded result."

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claim 1 is rejected under 35 U.S.C. 102(a) as being anticipated by Sekiguchi et al. (US 6493385 B1).

Re claim 1, Sekiguchi discloses a video decoding unit for decoding a predetermined plurality of different video object plane (VOP) types (Fig. 10; coding modes listed include intra-coding, bidirectional prediction, and both forward and backward prediction), the decoding unit comprising: at least one decoding module

capable of decoding a predetermined signal in each of the predetermined plurality of different VOP types and outputting a decoded result specifically corresponding to the VOP type currently being decoded (Fig. 30; decoding is carried out by the decoder corresponding to MB Type).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 2-4, 7-9, and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiguchi et al. (US 6493385 B1).

Re claim 2, Sekiguchi does not specifically disclose that the decoded result is based upon a predetermined lookup table specifically corresponding to the VOP type currently being decoded. However, Sekiguchi does disclose in Fig. 30 a change-over unit 116, which receives a control signal 302 from a MBTYPE table selection

information decoding unit 111, and selects a corresponding decoding unit 117 and 118 based on the macroblock type. The resultant quantization step information 309 and block data 307 from the system of Fig. 30 is fed to the inverse quantization unit 72 in Fig. 29. The Examiner takes Official Notice that the use of lookup tables corresponding to specific picture types (I, P, or B) when performing quantization or dequantization is notoriously well known in the art and would have been obvious to a person having ordinary skill in the art at the time of the invention.

Re claim 3, Sekiguchi discloses that, referring to Fig. 30, "The MBTYPE-1 table of the MBTYPE-1 decoding unit 117 and the MBTYPE-2 table of the MBTYPE-2 decoding unit 118 respectively have contents shown in FIG. 9 or FIG. 10 described in the picture coding apparatus of the second embodiment (column 23, lines 19-23)." Figs. 9 and 10 show different coding modes, including intra-coding, bidirectional prediction, and both forward and backward prediction. Furthermore, Sekiguchi discloses in column 13, lines 19-31 and 49-63, that the code-word indicating each coding mode is registered to the MBTYPE-1 or MBTYPE-2 decoding unit. Since each coding-mode has unique properties, and uses different parameters, the table for each coding-mode is unique.

Re claim 4, Sekiguchi discloses a switching circuit connected to the decoding module for determining which of the predetermined plurality of VOP types the decoding module is to decode (Fig. 30/116; Fig. 29/76, further detailed by Fig. 31).

Re claim 7, the MB type from Figs. 9 and 10 of Sekiguchi (which indicate the coding mode) are used by the change-over unit 116 in Fig. 30, and the signal is passed

to the decoding unit (either 117 or 118) depending on the MB type. The path set by the change-over unit remains fixed until the MB type indicates the other decoder to be used. Therefore, the path set between the change-over unit 116 and the decoding unit (117 or 118) based on the MB type acts as a VOP type indicating flag, where the flag indicates which decoding unit to be used.

Claim 8 has been analyzed and rejected in view of the analysis for claim 7 above.

Re claim 9, Sekiguchi discloses that the predetermined lookup table specifically corresponding to the VOP type the decoding module is to decode is transmitted from the switching circuit to the decoding module (column 13, lines 19-31 and 49-63; The specific parameters are for each coding mode are registered in the MBTYPE tables for each coding mode. This occurs through the change-over unit 116 (Fig.30), since both the control signal 302 and coded bit stream 316 (via blocks 112, 113, and 114) are fed into the change-over unit 116, and not directly to the MBTYPE decoding units 117 and 118).

Re claim 16, Sekiguchi discloses a method for decoding a plurality of different types of MPEG video object planes (VOP), the method comprising: providing a decoding module capable of decoding a predetermined signal in the different types of VOP (Fig. 33/ST95); and indicating to the decoding module which of the different types of VOP the decoding module is to decode (Fig. 33/ST96 and ST98).

Sekiguchi does not specifically disclose the decoding module accessing a lookup table specifically corresponding to the indicated type of VOP to decode the

predetermined signal. However, Fig. 33 corresponds to the system depicted in Fig. 30, which is a component of the system depicted in Fig. 29. Fig. 29 corresponds to the method shown in Fig. 32 and includes an inverse quantization step (Fig. 32/ST52; Fig. 29/72). The Examiner takes Official Notice that the use of lookup tables corresponding to specific picture types (I, P, or B) when performing quantization or dequantization is notoriously well known in the art and would have been obvious to a person having ordinary skill in the art at the time of the invention.

Re claim 17, Sekiguchi discloses that, referring to Fig. 30, "The MBTYPE-1 table of the MBTYPE-1 decoding unit 117 and the MBTYPE-2 table of the MBTYPE-2 decoding unit 118 respectively have contents shown in FIG. 9 or FIG. 10 described in the picture coding apparatus of the second embodiment (column 23, lines 19-23)." Figs. 9 and 10 show different coding modes, including intra-coding, bidirectional prediction, and both forward and backward prediction. Furthermore, Sekiguchi discloses in column 13, lines 19-31 and 49-63, that the code-word indicating each coding mode is registered to the MBTYPE-1 or MBTYPE-2 decoding unit. Since each coding-mode has unique properties, and uses different parameters, the table for each coding-mode is unique.

Re claim 18, the MB type from Figs. 9 and 10 of Sekiguchi (which indicate the coding mode) are used by the change-over unit 116 in Fig. 30, and the signal is passed to the decoding unit (either 117 or 118) depending on the MB type. The path set by the change-over unit remains fixed until the MB type indicates the other decoder to be used. Therefore, the path set between the change-over unit 116 and the decoding unit (117 or

118) based on the MB type acts as a VOP type indicating flag, where the flag indicates which decoding unit to be used.

Claim 19 has been analyzed and rejected in view of the analysis for claim 18 above.

Re claim 20, Sekiguchi discloses that the type of VOP the decoding module is to decode is indicated by a switching circuit transmitting the corresponding lookup table to the decoding module (column 13, lines 19-31 and 49-63; The specific parameters are for each coding mode are registered in the MBTYPE tables for each coding mode. This occurs through the change-over unit 116 (Fig.30), since both the control signal 302 and coded bit stream 316 (via blocks 112, 113, and 114) are fed into the change-over unit 116, and not directly to the MBTYPE decoding units 117 and 118).

8. Claims 5, 6, and 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiguchi et al. (US 6493385 B1) as applied to claims 1-4, 7-9, and 16-20 above, and further in view of Chen (US 6043838 A).

Re claim 5, Sekiguchi does not specifically disclose a multiplexer having an input connected to an output of the decoding module for selectively outputting the coded result to a memory for further processing. However, Chen discloses in Fig. 1 a temporal remultiplexer 140, which outputs to a display device (column 5, lines 52-59). One of ordinary skill in the art at the time of the invention would have found it obvious that display devices contain memory, which acts as a buffer for video data. Since both

Sekiguchi and Chen disclose MPEG-4 decoding systems, one of ordinary skill in the art at the time of the invention would have found it obvious to combine their teachings.

Re claim 6, Sekiguchi does not specifically disclose that the output of a multiplexer is determined by a switching circuit. However, in Figs. 3 and 4, described in column 6, lines 52-63, Chen disclose that P-pictures and B-pictures are processed in the enhancement layer, which passes through the remultiplexer. The output type of the decoding unit (I, P, or B) is resultant from the mode determined by the MB type, and thus the change-over unit (switch). When combining Chen and Sekiguchi, one of ordinary skill in the art at the time of the invention would have found it obvious that the output from the remultiplexer (which would be connected to the output of the decoding system) would be determined by the change-over unit (switch), since the switch is integral in determining the type of picture resulting from the decoding process in Sekiguchi. Furthermore, one of ordinary skill in the art would have found it obvious to make this combination, since both Sekiguchi and Chen disclose MPEG-4 decoding systems.

Re claim 10,Sekiguchi discloses a device comprising: a memory (Fig. 29/75); a plurality of video decoding modules, each video decoding module capable of decoding a predetermined signal (Fig. 30/117 and 118) in a Data partitioned predicted video object plane (DP-P VOP) (Sekiguchi discloses separate blocks for processing motion compensation (Fig. 29/104; motion information) and an inverse DCT unit (Fig. 29/103; texture information) and outputting a decoded result according to the type of VOP (Fig. 10; coding modes listed include intra-coding, bidirectional prediction, and both forward

and backward prediction); and a switching circuit connected to the plurality of video decoding modules for indicating to each decoding module which type of VOP is to be decoded (Fig. 30/116).

Sekiguchi does not specifically disclose a multiplexer having inputs respectively connected to outputs of the plurality of video decoding modules and having an output connected to the memory. However, Chen discloses in Fig. 1 a temporal remultiplexer 140, which outputs to a display device (column 5, lines 52-59). One of ordinary skill in the art at the time of the invention would have found it obvious that display devices contain memory, which acts as a buffer for video data.

Sekiguchi does not specifically disclose a switching circuit connected to the multiplexer for controlling which decoded result is transmitted to the memory. However, in Figs. 3 and 4, described in column 6, lines 52-63, Chen disclose that P-pictures and B-pictures are processed in the enhancement layer, which passes through the remultiplexer. The output type of the decoding unit (I, P, or B) is resultant from the mode determined by the MB type, and thus the change-over unit (switch). When combining Chen and Sekiguchi, one of ordinary skill in the art at the time of the invention would have found it obvious that the output from the remultiplexer (which would be connected to the output of the decoding system) would be determined by the change-over unit (switch), since the switch is integral in determining the type of picture resulting from the decoding process in Sekiguchi. Furthermore, one of ordinary skill in the art would have found it obvious to make this combination, since both Sekiguchi and Chen disclose MPEG-4 decoding systems.

Re claim 11, Sekiguchi discloses that, referring to Fig. 30, "The MBTYPE-1 table of the MBTYPE-1 decoding unit 117 and the MBTYPE-2 table of the MBTYPE-2 decoding unit 118 respectively have contents shown in FIG. 9 or FIG. 10 described in the picture coding apparatus of the second embodiment (column 23, lines 19-23)." Figs. 9 and 10 show different coding modes, including intra-coding, bidirectional prediction, and both forward and backward prediction. Furthermore, Sekiguchi discloses in column 13, lines 19-31 and 49-63, that the code-word indicating each coding mode is registered to the MBTYPE-1 or MBTYPE-2 decoding unit. Since each coding-mode has unique properties, and uses different parameters, the table for each coding-mode is unique.

Claim 12 has been analyzed and rejected in view of the analysis for claim 11 above.

Re claim 13, Sekiguchi discloses that the predetermined lookup table specifically corresponding to the VOP type the decoding module is to decode is transmitted from the switching circuit to the decoding module (column 13, lines 19-31 and 49-63; The specific parameters are for each coding mode are registered in the MBTYPE tables for each coding mode. This occurs through the change-over unit 116 (Fig.30), since both the control signal 302 and coded bit stream 316 (via blocks 112, 113, and 114) are fed into the change-over unit 116, and not directly to the MBTYPE decoding units 117 and 118).

Re claim 14, the MB type from Figs. 9 and 10 of Sekiguchi (which indicate the coding mode) are used by the change-over unit 116 in Fig. 30, and the signal is passed

to the decoding unit (either 117 or 118) depending on the MB type. The path set by the change-over unit remains fixed until the MB type indicates the other decoder to be used. Therefore, the path set between the change-over unit 116 and the decoding unit (117 or 118) based on the MB type acts as a VOP type indicating flag, where the flag indicates which decoding unit to be used.

Claim 15 has been analyzed and rejected in view of the analysis for claim 14 above.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

a. Predictive encoding and decoding methods of video data

Jozawa et al. (US 6785331 B1)

"Video data predictive encoding methods using the two kinds of prediction modes, the global and local motion compensation modes, are provided, by which unnecessary MCSEL is reduced as much as possible, and the data compression efficiency is improved. In the encoder, after a code word MCBPC indicating the macroblock type and presence/absence of the DCT coefficient of each of two blocks for sending color-difference signals, a code word MCSEL indicating which motion-compensating mode, global or local, was adopted for the prediction of the current macroblock is output if the macroblock was not intraframe-encoded."

b. Image editing apparatus and method

Itokawa (US 7058128 B1)

"A shape decoder obtains shape data by decoding bit-stream data representing a shape, and a texture decoder obtains texture information by decoding a texture bit stream. A shape manipulation unit alters the shape data based upon an operation performed by user. In response to the end of shape manipulation processing, a texture altering unit alters the corresponding texture data in dependence upon updating of the shape data applied by the shape manipulation unit. As a result, processing for manipulating, editing and displaying an image comprising shape data and texture data can be performed more efficiently."

c. Image decoder, image encoder, image communication system, and encoded bit stream converter

Isu et al. (US 6862320 B1)

"An image decoding apparatus is capable of decoding coded bit streams with different coding schemes. The image decoding apparatus includes a coding scheme decision section for deciding a coding scheme from coding scheme identification information multiplexed into a coded bit stream, a setting unit for setting header information on a second coding scheme in accordance with header information in a first coding scheme, and a decoder for decoding image coded data in the first coding scheme in response to the header information on the second coding scheme, which is set."

d. Apparatus for system decoder and method for error correction of packet data

Suzuki et al. (US 7131048 B2)

"When a non-error-resilient application decoder receives a data stream containing syntax error due to transmission errors, such as packet losses in wireless communication, an application decoder cannot usually continue decoding the stream data anymore. According to the present invention, the data stream containing syntax error along with error correction data generated by error-detectable transmission system is inputted into an error correction part before inputted into the application decoder. The error correction part detects the error position in the data stream using the error detection data, corrects the syntax error in the stream data, and generates a stream data which is possible to be decoded by the application decoder. As a result, the data stream containing syntax error can continue decoding or be decoded in better quality by a non-error-resilient application decoder, without adding any error correcting function in the existing application decoder."

e. Information processing method and apparatus

Nakagawa et al. (US 6810131 B2)

"In an image encoding apparatus for receiving and encoding an image signal, the input image signal is encoded in units of blocks in accordance with an encoding parameter via a DCT device, quantizer, and variable-length encoder. The encoded codes are multiplexed together with information indicating the presence/absence of scrambling, authentication data, a quantization parameter used in the quantizer, and a quantization parameter obtained by converting this

quantization parameter. A copyrighted image signal is scrambled upon encoding, an image decoding apparatus of an authentic viewer normally plays back, and an image decoding apparatus of an unauthentic viewer plays back an image with which the viewer can recognize its outline."

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Findley whose telephone number is (571) 270-1199. The examiner can normally be reached on Monday-Friday 7:30am-5pm, Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571) 272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher Findley/

Mehrdad Dastouri

MEHRDAD DASTOURI
SUPERVISORY PATENT EXAMINER
TC 2600